

NASA awards life, biomedical science research grants

NASA announced Tuesday the selection of 46 proposals to receive two- and- three-year grants for ground-based or space-borne life sciences research totaling approximately \$15 million.

Seven of the proposals were from Texas and JSC.

The purpose of the grants is to encourage science and technology research in the space life sciences. The grants funded through this annual NASA research announcement support a program of research that conducts experiments on Earth and

in space to provide the basic understanding of the role of gravity in biological processes.

Sponsored by NASA's Office of Life and Microgravity Sciences and Applications, Washington, D.C., the grants offer investigators the opportunity to take advantage of NASA's life and biomedical sciences research facilities to improve the understanding of fundamental biological processes.

NASA received 380 proposals in response to the research announcement. The proposals were subjected

to an external peer-review through assembled panels made up of scientific and technical experts. The selected proposals represent the following areas: space biology (16); space physiology and countermeasures (11); environmental health (2); space radiation health (3); space human factors (3); advanced life support (5); advanced extravehicular activity systems (1); advanced technology development (2); data analysis (2) and interdisciplinary proposals (1).

NASA's life and biomedical sciences grants provide investigators

with the opportunity to study and characterize basic biological mechanisms in ways not possible on Earth. By using access to space as a research tool, NASA-sponsored research will advance fundamental knowledge of the way in which weightlessness, radiation, and other aspects of the space flight environment interact with biological processes. These grants also seek to enhance the application of this knowledge to procedures and technologies that enable humans to live, work and explore in space and to

benefit the health and well-being of people on Earth.

Texas scientists selected for NASA life sciences research grants are: Daniel L. Feedback, Ph.D., Suzanne M. Fortney, Ph.D., Kenneth C. Jenks, James C. Maida, Duane L. Pierson, Ph.D., and Kwangjae Sung, Ph.D., all of JSC; Clarence P. Alfrey, M.D., Ph.D., Baylor College of Medicine, Houston; Arny A. Ferrando, Ph.D., Shriners Burns Institute, Galveston; and Stanley J. Roux, Ph.D., The University of Texas at Austin.



TEXAS CITY OUTREACH-Cooperative education students Robert Koudelka, right, and Drew Matter, second from right, reach out to biology students at Texas City High School last month as part of an annual effort to interest high school students in science, engineering and aerospace careers. Koudelka, a Purdue electrical engineering student, is working in the Engineering Avionic Systems Division, while Matter, a Georgia Tech mechanical engineering student, is working in Mission Operations' Extravehicular Activities Branch.

Astronaut interviews continue with third group

The third of several groups of prospective astronauts will be at JSC next week for orientation, interviews and medical evaluations.

The third group of 20 includes Stephen A. Becker, Ph.D., Los Alamos, N.M.; Dr. Jay C. Buckey, Jr., Hanover, N.H.; Stephen G. Di Domenico (Captain, USAF), Henderson, Nev; Patrick E. Duffy (Major, USAF), Beavercreek, Ohio; David A. Dunaway (Lt. Cdr., USN), Ridgecrest, Calif.; John E. Gochenaur (Major, USAF), Centerville, Ohio; Christopher A. Habig (Major, USAF), Waldorf, Md.; Scott J. Kelly (Lieutenant, USN), Lexington Park, Md.; Sandra H. Magnus, Smyrna, Ga.; Caitlin P. Mullen, Ph.D., Annapolis, Md.; John L. Phillips, Ph.D., Los

Alamos, N.M.; John C. Rader (Lt. Col., USMC), Mission Viejo, Calif.; Michael C. Ruff (Major, USAF), Millbrook, Ala.; Piers J. Sellers, Ph.D., Greenbelt, Md.; Thomas D. Stuart (Lt. Cdr., USN), Fairfax Station, Va.; Todd T. Tamura (Captain, USAF), Colorado Springs, Colo.; Rex J. Walheim (Captain, USAF), Palmdale, Calif.; John K. Watson, Houston; Peggy A. Whitson, Ph.D., El Lago; and Robert A. Wilson (Major, USAF), Lancaster, Calif.

Astronaut candidate selections are conducted approximately every two years. The number of candidates selected depends upon the space shuttle flight rate, overall program requirements and astronaut attrition.

Dailey to address local NMA

Gen. John R. Dailey, NASA acting deputy administrator, will speak at the next meeting of the NASA JSC National Management Association.

The JSC community is invited to attend the Dec. 13 meeting at the Gilruth Center ballroom, beginning with a social hour at 5 p.m., dinner at 6 p.m., and Dailey's presentation at 6:30 p.m.

Reservations must be made by Wednesday. Contact Kathleen Kaminski, x38706, for reservations.

The National Management Association is dedicated to the development and recognition of management as a profession and

the promotion of the American Enterprise System. It is the largest professional association of its type in the world, with approximately 70,000 members in 265 chapters.

As a special benefit for new members who join during the month of December, the NASA JSC NMA will waive the usual \$20 initiation fee. This organization offers all NASA employees the opportunity to develop leadership skills and team-building experiences through monthly meetings, professional development courses, seminars, and other activities. For more information on the JSC NMA, contact Kaminski.

Performance management group offers earned value lunch series

The NASA/Houston Chapter of the Performance Management Association is conducting a series of five luncheon meetings on the implementation of Earned Value Management Systems at JSC.

All of the meetings begin at 11:15 a.m. at the Ramada Inn NASA.

The series started Nov. 9 with Ralph Schomburg presenting the NASA Headquarters perspective for Earl Reese from the Office of the Chief Financial Officer.

On Dec. 7, the second installment will feature the JSC perspective with JSC Comptroller Wayne Draper,

JSC Director of Business Management Terri Hesse and Space Station Business Manager Dan Tam.

The contractor perspective will be the focus of a Jan. 25 meeting with representatives from Boeing, Hughes-Link, Loral, McDonnell Douglas, Rockwell, SAIC, and Unisys. A NASA/contractor technical panel discussion will be held Feb. 22. The final luncheon series on March 28, will feature vendor demonstrations and discussions.

For more information, contact Susan Widmer at x34299.

Trajectory pioneer famous for 'Tindallgrams'

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began his career with NASA's predecessor, the National Advisory Committee for Aeronautics, at Langley Research Center, Va.

While at Langley, he handled wind tunnel instrumentation problems and participated in Project Echo as a specialist in orbit computations and determinations, and then in formulating plans and real-time computer programs in support of Project Mercury.

He moved to Houston in 1961, becoming responsible for all Gemini mission planning in the Flight Operations Directorate and as assistant chief of the Mission Planning and Analysis Division on a temporary assignment to the Gemini Program Office. He chaired the Trajectories and Orbits Panel, considered one of the key groups for Gemini flight design.

"The Gemini Trajectories and Orbits Panel is where it started and it carried on into Apollo," said Apollo Astronaut Buzz Aldrin. "There was a period when that meeting was suspended and so many of us in mis-

sion planning felt lost for a period of several months until that panel was reinstituted with a memo in typical Tindall fashion, entitled 'T&O Rides Again.' Everyone sensed a relief because they knew mission planning was in good hands again."

Such memos, dubbed "Tindallgrams," were written in an irreverent style that captured the hearts of detailed and complicated discussions about a variety of key space flight topics and explained them eloquently.

Tindall became an expert in orbital mechanics, Kraft said. He was primarily responsible for development of rendezvous techniques for Gemini, and when Apollo took center stage he began working on lunar trajectories. In 1966, Apollo Spacecraft Program Manager George Low made Tindall responsible for all guidance and navigation computer software development by the Massachusetts Institute of Technology.

In 1967, Low put him in charge of a group called Mission Techniques for Apollo designed to bring together everyone in mission techniques and

hardware development and coordinate flight crew procedures, mission rules, mission planning, spacecraft and control center computer programming and Apollo operations handbooks.

"That's where famous Tindallgrams came from," Kraft said. "He would have meetings weekly, daily on all of these processes for going to and from the Moon from a planning point of view. He would record issues, arguments as well as results in what got to be known famously as Tindallgrams. Those were the hardened core of Apollo as far as operations planning was concerned."

"He had a brilliant way of analyzing things and the leadership that gathered diverse points of view with the utmost fairness," Aldrin remembered. "He listened to all points of view and then made and carried out astute decisions."

In 1970, Tindall was appointed deputy director of Flight Operations, and in 1972, he became director, planning all phases of flight operations activities. Funeral services were held in Dallas.

Stardust mission to return dust from comet

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tion," Huntress said.

"Stardust should also give us some unique guidance about how to focus the science we plan to conduct a few years later with a surface lander on a different comet during the international Rosetta mission."

Stardust will be launched on an expendable launch vehicle in February 1999 for a total mission cost to NASA in real-year dollars of \$199.6

million. The return capsule carrying the dust samples would parachute to Earth for landing on a dry Utah lake bed in January 2006.

Stardust will use an unusual material called aerogel to capture the dust samples. This porous, extremely low density material is somewhat like glass in that it is made of silica—a pure form of sand—and it has about the same melting point. Although aerogel does not absorb moisture,

the strangely fluorescent substance can absorb large amounts of gas or particle matter.

The spacecraft also will carry an optical camera that should return cometary images with 10 times the clarity of those taken of Halley's Comet by previous space missions, as well as a mass spectrometer provided by Germany to perform compositional analysis of the samples in-flight.

Research could help fight other diseases

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The research has paid dividends in other areas as well, Carter said. "Information gained in the search for a particular atomic structure often helps us learn more quickly about other research targets," he said. "For instance, a three-dimensional crystal structure of a schistosomiasis enzyme joined with atomic structural components of Human Immunodeficiency Virus type 1 (HIV-1) has

also been resolved. This structural, building-block approach to HIV research has helped us learn more about the structure of HIV proteins, which have proven difficult to crystallize and thus study more thoroughly."

Schistosomiasis research at MSFC was performed in collaboration with the Institute of Applied Microbiology in Vienna, Austria, and the Center for Advanced Research in Biotechnology of the National Institute of Standards

in Washington, D.C.

Also known as bilharzia, schistosomiasis is a disease caused by any of four parasitic flatworms or flukes. Persons can become infected with schistosomiasis when they wade or swim in contaminated fresh water by exposure to skin-penetrating, free-swimming larvae in parts of Brazil, Egypt, sub-Saharan Africa, southern China, the Philippines and Southeast Asia. There is no vaccine.

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Correction

A photograph that appeared on Page 6 of the Nov. 24 Space News Roundup incorrectly identified a woman conducting the blood sugar testing.

Reta Warren, a Medical Technologist, American Society of Clinical Pathologists, drew the sample. Warren is the laboratory manager for the JSC Clinic.

STS-74 talk Thursday

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Jerry Ross, and Bill McArthur will brief employees on the second shuttle-Mir docking mission from 10-11:30 a.m. Thursday in Teague Auditorium.

Immediately prior to each briefing, the crews' accomplishments will be recognized by the presentation of the NASA Space Flight Medals.